



Original Research Article

## A Cross Sectional Study Regarding Perceptions of Risk Factors and Complications of Obesity in Female Medical Students of South India

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### ABSTRACT

**Introduction:** Globally, non-communicable diseases are increasingly recognized as a major cause of morbidity and mortality. The countries of the South-East Asia region are facing a double burden, with a heavy load of infectious diseases and an increasing burden due to non-communicable diseases. The increasing burden of non-communicable diseases, particularly in developing countries including India, threatens to overwhelm already stretched health services. Several diseases come under the umbrella of non-communicable diseases and more common cause is obesity.

**Materials and methods:** Present cross sectional study was carried out in a month of November 2012. Study was conducted among all 1<sup>st</sup> and 2<sup>nd</sup> year female MBBS students of Katuri Medical College, Guntur (Andhra Pradesh). Height and weight were measured using the standard procedures suggested by Jelliffe. Body Mass Index was computed using the formula [weight in (kg) / height (m<sup>2</sup>)].

**Results:** Using the BMI cut-off points, the findings revealed that 23.30 % study subjects were overweight and 12.50 % study subjects were obese. When the girls were asked about factors contributing to obesity, an overwhelming majority (85.80%) of the subjects attributed diet for obesity. As far as psychosocial problems concerned, nearly 59.66 of the subjects mentioned low self-esteem as the complication related to obesity.

**Conclusion:** Higher prevalence of overweight and obesity in this early age group calls for the prevention and control of this problem with prime attention. Obesity is known to increase the risk of various diseases and awareness of them is the first step towards taking steps to prevent this. While high level of awareness is present among medical students regarding major complications of obesity but for other complications, they should also get health education.

**Key words:** Body Mass Index, obesity, medical students

### INTRODUCTION

Globally, non-communicable diseases are increasingly recognized as a major cause of morbidity and mortality. The countries of the South-East Asia region are facing a double burden, with a heavy load of

infectious diseases and an increasing burden due to non-communicable diseases. <sup>(1)</sup> The increasing burden of non-communicable diseases, particularly in developing countries including India, threatens to overwhelm already stretched health services.

Several diseases come under the umbrella of non-communicable diseases and more common cause is obesity. <sup>(2,3)</sup>

Obesity is perhaps the most prevalent form of malnutrition in developed countries. There is an increased awareness of the problem in recent years. It has been estimated to affect 20-40% of the adults and 10-20% of the children and adolescents in developed countries. Physical inactivity may cause obesity, which in turn restricts activity. This is a vicious circle. It is the reduced energy output that is probably more important in the etiology of obesity.

In a recent study conducted in United States it is found that prevalence of obesity is more among women than among men. <sup>(4)</sup> In India also some North Indian studies showed the same results. <sup>(5)</sup> Given the fact that increased risk of cardio vascular disease is associated with obesity, it is essential to know the prevalence of overweight and obesity in populations. It is also necessary to find out how far the population is aware of the causes and consequences of obesity. The aim of this study is to find out the extent of the problem of obesity and to assess the subjects' awareness of risk factors and complications of obesity.

## MATERIALS AND METHODS

Present cross sectional study was carried out in a month of November 2012. Study was conducted among all 1<sup>st</sup> and 2<sup>nd</sup>

year female MBBS students of Katuri Medical College, Guntur (Andhra Pradesh). Before the start of the study, clearance was taken from College Ethical Committee. Each student was interviewed personally to collect the required information on pretested schedule and appropriate privacy was provided to take their anthropometric measurements. Height and weight were measured using the standard procedures suggested by Jelliffe. <sup>(6)</sup> Body Mass Index was computed using the formula [weight in (kg) / height (m<sup>2</sup>)]. WHO grading for body mass index (BMI) was used for determination of actual weight status as underweight (BMI <18.5), normal weight (BMI 18.5-24.9), overweight (BMI ≥ 25) & obesity (BMI ≥30). The data were analyzed using SPSS version 12.

## RESULTS

In our study, there are total 176 female students who participated in the study. Maximum number of students was in age group of 18-20 years i.e. 114 (64.77%) followed by 56(31.82%) students in age group of 21 -22 years. Few students 6 (3.41%) were above 22 years of age.

Using the BMI cut-off points(as shown in Table-1), the findings revealed that 23.30 % study subjects were overweight and 12.50 % study subjects were obese.

**Table 1: Distribution of study subjects according to B.M.I.**

Classification	BMI cut off points(kg/m <sup>2</sup> )	No of subjects	Percentage
Underweight and normal	< 25	113	64.20
Overweight	≥ 25	41	23.30
Obese	≥30	22	12.50
Total		176	100

**Table 2: Attributing factors responsible for obesity as per students' opinion.**

Factors	Underweight and normal (n=113)	Overweight & obese (n=63)	Total (n=176)
Dietary	94(83.19%)	57(90.48%)	151(85.80%)
Sedentary life style	71(62.83%)	43(68.25%)	114(64.77%)
Hereditary	18(15.93%)	21(33.33%)	39(22.16%)
Hormonal disorder	8(7.08%)	11(17.46%)	19(10.80%)

**Table 3: Perception of study subjects regarding obesity related complications.**

Complications	Underweight & normal (n=113)	Overweight & obese (n=63)	Total (n=176)
<b>Psychosocial problems</b>			
Low self esteem	64(56.64%)	41(65.08%)	105(59.66%)
Appearance	31(27.43%)	17(26.98%)	48(27.27%)
Social interaction	27(23.89%)	15(23.81%)	42(23.86%)
Marriage problems	24(21.24%)	8(12.70%)	32(18.18%)
<b>Physical problems</b>			
<b>Cardiovascular disorder</b>			
Heart disease	73(64.60%)	42(66.67%)	115(65.34%)
Rise in blood pressure	66(58.41%)	39(61.90%)	105(59.66%)
Diabetes mellitus	64(56.64%)	37(58.73%)	101(57.39%)
<b>Locomotor Problems</b>			
Walking trouble due to joint problems/Lack of easy motion	23(20.35%)	18(28.57%)	41(23.30%)
Difficulty in accomplishing task/Posture related problems	21(18.58%)	16(25.40%)	37(21.02%)
<b>Others</b>			
Sleeping trouble	18(15.93%)	15(23.81%)	33(18.75%)
Easy fatigue	10(8.85%)	11(17.46%)	21(11.935)

When the girls were asked about factors contributing to obesity, an overwhelming majority (85.80%) of the subjects attributed diet for obesity. An attempt was further made to analyze the opinion of respondents according to their BMI weight category status; it revealed almost similar response among the subjects irrespective of their BMI status (Table-2).

As far as psychosocial problems concerned, nearly 59.66 of the subjects mentioned low self-esteem as the complication related to obesity (Table 3). Regarding physical health, the common complication perceived by the subjects were heart disease (65.34%), rise in blood pressure (59.66%) and diabetes mellitus (57.39%). As far as locomotor problems were concerned, they were perceived by 44.32% of subjects as a complication of obesity.

## DISCUSSION

In the present study 23.30 % study subjects were overweight and 12.50 % study subjects were obese. In a study on “Body Image Perception and Attempts to Change Weight among Female Medical Students at Mangalore” by Priya et al. (7) showed that 25(17%) subjects were undernourished

while 111(75.5%) and 11(7.5%) were normally nourished and overweight respectively. The findings of study by Augustine and Poojara (8) on urban college going girls of Ernakulam also showed the higher prevalence of overweight and obesity of 24% & 10.5% respectively.

In our study we found that 18-20 yrs age groups having more prevalence of overweight/obesity. Study conducted by Augustine & Poojara (8) among urban college going girls of Ernakulam has reported the prevalence of obesity more among 18 year age group than beyond that.

Study conducted by V. Sekar et al. (9) among women in Coimbatore showed quite lower level of awareness (69.6%) as compared to our study (85.80%) regarding diet as a cause for obesity. This difference indicates the degree of unawareness of subjects in their study as the present study was conducted only in college. They also reported that a large proportion of the overweight women failed to mention lack of exercise (26%) as contributing to obesity which is less as compared as to our study (64.77%).

Sung RY et al. (10) reported more overweight than normal weight children perceive themselves to have more body fat,

and lower physical competence and self-esteem. Our study has reported a relatively lower level of awareness than study conducted by V. Sekar et al. <sup>(9)</sup> among women in Coimbatore who pointed it out that 71.3% of urban women were aware regarding heart attack as a complication of obesity as compared to our study (65.34%), 64.4% vs 59.66% for hypertension, 62.6% vs 57.39 % for diabetes and 60.5% vs 23.30% for arthritis. Also showed in their study that overweight women were more aware than those with normal weight subjects for the complications. This can be due to the fact that their study has been conducted among women more than 20 years, and their subjects might be facing such complications among themselves or their peer groups.

## CONCLUSION

Higher prevalence of overweight and obesity in this early age group calls for the prevention and control of this problem with prime attention. Obesity is known to increase the risk of various diseases and awareness of them is the first step towards taking steps to prevent this. While high level of awareness is present among medical students regarding major complications of obesity but for other complications, they should also get health education.

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